**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

APR 28 2005

REPLY TO THE ATTENTION OF:
WW-16J



Ms. Martha Clark Mettler
Indiana Department of Environmental Management
100 N. Senate Ave.
P.O. Box 6015
Indianapolis, IN 46206

Dear Ms. Clark Mettler:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the final Total Maximum Daily Loads (TMDLs) for the First Creek Watershed in Indiana. They include First Creek, Rocky Branch and other tributaries, and Culpepper Branch Tributaries. The Indiana Department of Environmental Management's (IDEM's) TMDLs address the *E. coli* impairment of recreational use in Martin, Daviess, and Greene Counties. Based on this review, U.S. EPA has determined that Indiana's six TMDLs for *E. coli* meet the requirements of Section 303(d) of the Clean Water Act and U.S. EPA's implementing regulations at 40 C.F.R. Part 130. Therefore, U.S. EPA hereby approves six TMDLs for the First Creek Watershed in Indiana. The statutory and regulatory requirements, and U.S. EPA's review of Indiana's compliance with each requirement, are described in the enclosed decision document.

We wish to acknowledge Indiana's effort in submitting these TMDLs, addressing six *E. coli* impairments, and look forward to future TMDL submissions by the State of Indiana. If you have any questions, please contact Mr. Kevin Pierard, Chief of the Watersheds and Wetlands Branch at 312-886-4448.

Sincerely yours,

for Jo Lynn Traub
Director, Water Division

Enclosure
cc: Andrew Pelloso, IDEM

**TMDL:** First Creek Watershed, Indiana
**Date:** APR 28 2005

# DECISION DOCUMENT FOR APPROVAL OF THE FIRST CREEK WATERSHED TMDL IN INDIANA

Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 C.F.R. Part 130 describe the statutory and regulatory requirements for approvable TMDLs. Additional information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation. Use of the term "should" below denotes information that is generally necessary for EPA to determine if a submitted TMDL is approvable. These TMDL review guidelines are not themselves regulations. They are an attempt to summarize and provide guidance regarding currently effective statutory and regulatory requirements relating to TMDLs. Any differences between these guidelines and EPA's TMDL regulations should be resolved in favor of the regulations themselves.

## 1. Identification of Waterbody, Pollutant of Concern, Pollutant Sources, and Priority Ranking

The TMDL submittal should identify the waterbody as it appears on the State's/Tribe's 303(d) list. The waterbody should be identified/georeferenced using the National Hydrography Dataset (NHD), and the TMDL should clearly identify the pollutant for which the TMDL is being established. In addition, the TMDL should identify the priority ranking of the waterbody and specify the link between the pollutant of concern and the water quality standard (see section 2 below).

The TMDL submittal should include an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading, e.g., lbs/per day. The TMDL should provide the identification numbers of the NPDES permits within the waterbody. Where it is possible to separate natural background from nonpoint sources, the TMDL should include a description of the natural background. This information is necessary for EPA's review of the load and wasteload allocations, which are required by regulation.

The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as:

(1) the spatial extent of the watershed in which the impaired waterbody is located;
(2) the assumed distribution of land use in the watershed (e.g., urban, forested, agriculture);
(3) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources;
(4) present and future growth trends, if taken into consideration in preparing the TMDL (e.g., the TMDL could include the design capacity of a wastewater treatment facility); and

(5) an explanation and analytical basis for expressing the TMDL through *surrogate measures*, if applicable. *Surrogate measures* are parameters such as percent fines and turbidity for sediment impairments; chlorophyll *a* and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.

Comment:

*Location Description:* First Creek is located in southwest Indiana, in Martin, Daviess, and Greene Counties (Figure 1 of the TMDL submittal) and was listed as impaired in Indiana's 2002 303(d) list for *E. coli*. The Introduction Section of the TMDL submittal states that in 2004 more segments were listed based on sampling done on other portions of the watershed, totaling 58 miles in length. These additional segments include Rocky Branch and other tributaries; since the 2004 list, the Culpepper Branch Tributaries has been added. Both single samples and geometric mean samples often were above the standards for *E. coli*.

The six impaired segments included in the TMDL submittal in the Background Section, and listed in IDEM's 2002 and 2004 Section 303(d) reports, along with the additional segment, are found below in the table. All six segments of the listed stream are located in the West Fork White River Basin in hydrologic unit code 05120202050.

*Topography and Land Use:* The TMDL states in the Source Assessment Section that as of 1992, approximately 36% of the landuse in the First Creek watershed is agricultural, the remaining is

| Waterbody Name | 303(d) List ID | Segment ID number(s) | Length (miles) | Impairment |
|---|---|---|---|---|
| First Creek and Unnamed Tributaries | 116 | INW0256_T1030, INW0257_T1031, INW0255_00, INW0257_T1030 | 31.0 | *E. coli* |
| Rocky Branch and Other Tributaries | 116 | INW0257_00 | 13.0 | *E. coli* |
| Culpepper Branch Tributaries | 116 | INW0256_00 | 14.0 | *E. coli* |

approximately 1% developed, 3% palustrine wetlands, 57% terrestrial, and 3% water. There was not a large change since the previous evaluation in the mid-1970s, so future growth is not a large concern.

*Pollutant of concern:* The pollutant of concern is *E. coli*.

*Pollutant sources:* There are primarily three sources of *E. coli* in the First Creek watershed. The nonpoint sources include:

- Wildlife - deer, geese, turkeys, and other animals
- Septic systems - Daviess County Health Department reports 40 - 45% failure rate during the past year (based on communication of the IDEM with representatives of the Daviess County Health Department). Septic systems are also a known problem in Cass and Jackson Townships in Greene County (based on communication of the IDEM with

representatives of the Daviess County Health Department)

- Small livestock operations - *not regulated* due to small size (further explanation in following paragraph), but believed to be a source.

Confined Feeding Operations (CFOs) and Confined Animal Feeding Operations (CAFOs) *are regulated.* CFOs are regulated under Indiana Administrative Code (IAC) 16, which includes general provisions, definitions, performance standards for all CFOs, and general approval conditions. As stated in IAC 16-3-1 (a) A confined feeding operation shall be managed to avoid an unpermitted discharge into waters of the state. (b) A confined feeding operation must be conducted in a manner that minimizes nonpoint source pollution entering waters of the state. According to the State these CFOs are not significant sources of *E. coli* as long as they are in compliance with the requirements of 327 IAC 16, and at this time there are no enforcement actions against the operators of these CFOs. There are four confined feeding operations in the watershed, one of which is a CAFO regulated by a NPDES general permit and 327 IAC 15-15. Table 2 below lists these facilities.

There are two NPDES permitted facilities that are point sources but they are not believed to be contributing to the *E. coli* problem because any sanitary waste is sent to a municipal wastewater treatment facility. They are listed in Figure 5, Table 1 of the TMDL submittal. They have

**Table 2: Permitted Confined Feeding Operations and Confined Animal Feeding Operations in the First Creek Watershed**

| | | | Approved Animals | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Log Number | Name | NPDES Permits | Nursery Pig | Grower/Finishers | Sows/Boars | Beef | Dairy | Dairy Calves | Veal | Layers | Turkeys |
| 754 | Aaron Swartzentruber | | 150 | 1,400 | 88 | | | | | | |
| 793 | Nelson B Wittmer | | | 1,000 | | | | | | | |
| 3008 | Steve Swartzentruber | ING805002 | | 1,000 | | | | | | | |
| 4100 | First Creek Farms | | | | | | | | | | 36,000 |

wastewater only related to industrial processes.

| | | |
|---|---|---|
| ING040177 | Triad Mining, Inc. | not *E. coli* source |
| IN0001082 | Griffin Industries | not *E. coli* source |

*Priority ranking:* The IDEM states that the TMDL development schedule corresponds with their basin-rotation water quality monitoring schedule. Most TMDLs are based on the schedule to take advantage of all available resources to develop the TMDL. Prioritization is based on whether the designated uses are being met, the magnitude of the impairment, and other plans for the watershed. For example, some watershed groups may want to implement some Best

Management Practices (BMPs) and assess their success without a TMDL, or may be awaiting guidance from the U.S. EPA.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this first element.

## 2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribal water quality standard, including the designated use(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the antidegradation policy. (40 C.F.R. §130.7(c)(1)). EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

The TMDL submittal must identify a numeric water quality target(s) – a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical (e.g., chromium) contained in the water quality standard. The TMDL expresses the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target. Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target (e.g., when the pollutant of concern is phosphorus and the numeric water quality target is expressed as Dissolved Oxygen (DO) criteria). In such cases, the TMDL submittal should explain the linkage between the pollutant of concern and the chosen numeric water quality target.

Comment:

The TMDL submittal describes designated uses, numeric criteria, and anti-degradation policy of the Clean Water Act in the Numeric Targets Section.

*Use Designation:* The impaired designated use for the waterbodies in the First Creek watershed is for total body contact recreational use during the recreational season, April 1st through October 31st (327 IAC 2-1-6(d)).

*Narrative Standards:* The narrative criteria are the general water quality criteria that apply to all surface waters. These criteria state that all waters must be free from sludge; floating debris; oil and scum; color- and odor-producing materials; substances that are harmful to human, animal or aquatic life; and nutrients in concentrations that may cause algal blooms. (327 IAC 2-1-6)

*Numeric Standards:* 327 IAC 2-1-6(d) established the total body contact recreational use *E. coli* Water Quality Standard (WQS) for all waters in the non-Great Lakes system as follows: "*E. coli* bacteria, using membrane filter (MF) count, shall **not exceed one hundred twenty-five (125) per one hundred (100) milliliters as a geometric mean** based on not less than five (5) samples equally spaced over a thirty (30) day period **nor exceed two hundred thirty-five (235) per one hundred (100) milliliters in any one (1) sample in a thirty (30) day period."**

*Targets:* the target is for total body contact recreational use standard from April 1st through October 31st as stated in the previous paragraph for both single sample standards and geometric mean standards.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this second element.

### 3. Loading Capacity - Linking Water Quality and Pollutant Sources

A TMDL must identify the loading capacity of a waterbody for the applicable pollutant. EPA regulations define loading capacity as the greatest amount of a pollutant that a water can receive without violating water quality standards (40 C.F.R. §130.2(f) ).

The pollutant loadings may be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. §130.2(i)). If the TMDL is expressed in terms other than a daily load, e.g., an annual load, the submittal should explain why it is appropriate to express the TMDL in the unit of measurement chosen. The TMDL submittal should describe the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In many instances, this method will be a water quality model.

The TMDL submittal should contain documentation supporting the TMDL analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling. EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

TMDLs must take into account *critical conditions* for stream flow, loading, and water quality parameters as part of the analysis of loading capacity (40 C.F.R. §130.7(c)(1) ). TMDLs should define applicable *critical conditions* and describe their approach to estimating both point and nonpoint source loadings under such *critical conditions*. In particular, the TMDL should discuss the approach used to compute and allocate nonpoint source loadings, e.g., meteorological conditions and land use distribution.

Comment:

*Loading capacity:* the loading capacity is the water quality standard, that is,

- 125/100 ml (geometric mean (5) samples equally spaced over a thirty (30) day period),
- nor exceed 235/100ml (one (1) sample in a thirty (30) day period.)

*Method for cause and effect relationship:* The load duration curve approach was used for developing this TMDL, with an explanation found in the Linkage Analysis and Load Duration Curves Section. First, continuous flow data is required, and was provided by U.S. Geological Survey (USGS) gage 03360500 located upstream from the mouth of First Creek on the West Fork of the White River. The data reflect a range of natural occurrences from extremely high flows to extremely low flows. This dataset, combined with *E. coli* water quality data from the First Creek, is used for developing the load duration curves (Attachments B and C of the TMDL submittal). The flow data are transformed to load duration curves by applying water quality

criteria values for *E. coli* and appropriate conversion factors. Then the existing monitored water pollutant loads from various types of locations are added to the curve and other conversion factors are applied. In this way it can be determined which locations contribute loads above or below the water quality standard, or target, line. The final step is to determine where reductions need to occur.

IDEM's pathogen TMDL approach is based upon the premise that all discharges (point and non-point) must meet the WQS when entering the waterbody. If all sources are meeting the WQS at discharge, then the waterbody will by definition meet the WQS and the designated use. The plots show under what flow conditions the water quality exceedences occur. Those exceedences at the right side of the graph occur during low flow conditions, such as septic systems and illicit sewer connections; exceedences on the left side of the graphs occur during higher flow events, such as runoff. IDEM has reviewed these load duration curves, and believes that *E. coli* sources are attributed to both wet-weather (nonpoint) and dry-weather (point) events. The EPA agrees with this review. Using the load duration curve approach allows IDEM to determine which implementation practices are most effective for reducing *E. coli* loads based on flow regime. For example, if loads are significant during storm events, implementation efforts can target those BMPs that will most effectively reduce storm water run-off. This allows for a more efficient implementation effort. This TMDL is concentration-based, and ties directly into Indiana's water quality standard for *E. coli*. The target for this TMDL is the water quality standard, and therefore meeting this loading capacity will result in water quality standards being attained.

The load duration curve is a cost-effective TMDL approach, while still addressing the reductions necessary to meet WQS for *E. coli* bacteria. The approach also aids in sharing the responsibility for *E. coli* reductions among various municipalities in the TMDL watershed, which encourages collective implementation efforts. IDEM has incorporated recent data (2004) providing a more focused assessment of *E. coli* exceedances in the watershed, determining where load reductions are most appropriate in the First Creek watershed.

Weaknesses of the TMDL analysis are that Non-Point Source (NPS) load allocations were not assigned to specific sources within the watershed, and the identified sources of *E. coli* were assumed based on the data collected in the watershed, rather than determined by detailed monitoring and sampling efforts. Moreover, specific reductions were not quantified. However, EPA believes the weaknesses discussed in this TMDL are outweighed by the strengths of the TMDL approach and is appropriate based upon the information available. In the event that *E. coli* levels do not meet WQSs in response to implementation efforts described in the TMDL submittal (Pages 9-10), the TMDL strategy may be amended as new information on the watershed is developed, to better account for contributing sources of the impairment and to determine where reductions in the First Creek watershed are most appropriate.

*Critical conditions:* the load duration curve represents pollutants during both dry periods and wet weather events. Both of these conditions are critical for the conceptual model in describing how the pollutants behave in a natural environment and were considered when developing the curve. The TMDL, however, is not load based, but rather concentration based and the load allocation is equal to the geometric mean *E. coli* WQS for each month of the recreational season.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this third element.

## 4. Load Allocations (LAs)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity attributed to existing and future nonpoint sources and to natural background. Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. §130.2(g)). Where possible, load allocations should be described separately for natural background and nonpoint sources.

Comment:

*Load Allocation:* The load allocation is equal to the Water Quality Standard: 125/100 ml (geometric mean (5) samples equally spaced over a thirty (30) day period), nor exceed 235/100ml (one (1) sample in a thirty (30) day period).

The assumption used by the State in this load allocation strategy is that there are equal bacterial loads per unit area for all lands within the watershed. The responsibility for reducing the loads is relative to the amount of land under the jurisdiction of the various local governments. "This gives a clear indication of the relative amount of effort that will be required by each entity to restore and maintain the designated total body contact recreational use of the First Creek watershed." This concept is exemplified by Table 3 on the following page, taken from the TMDL submittal, indicating amounts of land in each Township in the watershed that will be responsible for reductions, with reductions in direct proportion to the percentage of land in each township. Later in their response to comments, IDEM and other states describe the use of this method as a preliminary step to establish responsibility equally among the entities in the watershed. The method alleviates problems with perceived unfair reduction burdens amongst entities. Later, the state will pursue more detailed source identification and implementation through the appropriate funding sources from 319 Grants and the Natural Resource Conservation Service (NRCS), or fulfillment of phase II stormwater permit obligations.

**Table 3: Land Area Distribution for the First Creek Watershed**

| Municipality | Square Mile | Percent |
|---|---|---|
| Taylor Township | 0.32 | 0.62 |
| Jackson Township | 4.6 | 8.81 |
| Cass Township | 6.8 | 13.1 |
| Mitcheltree Township | 1.8 | 3.5 |
| Perry Township | 19.7 | 37.9 |
| Madison Township | 18.5 | 35.8 |
| Elmore Township | 0.14 | 0.27 |
| **Total** | **51.9** | **100** |

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this fourth element.

## 5. Wasteload Allocations (WLAs)

EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to individual existing and future point source(s) (40 C.F.R. §130.2(h), 40 C.F.R. §130.2(i) ). In some cases, WLAs may cover more than one discharger, e.g., if the source is contained within a general permit.

The individual WLAs may take the form of uniform percentage reductions or individual mass based limitations for dischargers where it can be shown that this solution meets WQSs and does not result in localized impairments. These individual WLAs may be adjusted during the NPDES permitting process. If the WLAs are adjusted, the individual effluent limits for each permit issued to a discharger on the impaired water must be consistent with the assumptions and requirements of the adjusted WLAs in the TMDL. If the WLAs are not adjusted, effluent limits contained in the permit must be consistent with the individual WLAs specified in the TMDL. If a draft permit provides for a higher load for a discharger than the corresponding individual WLA in the TMDL, the State/Tribe must demonstrate that the total WLA in the TMDL will be achieved through reductions in the remaining individual WLAs and that localized impairments will not result. All permitees should be notified of any deviations from the initial individual WLAs contained in the TMDL. EPA does not require the establishment of a new TMDL to reflect these revised allocations as long as the total WLA, as expressed in the TMDL, remains the same or decreases, and there is no reallocation between the total WLA and the total LA.

Comment:

*Wasteload Allocation (WLA):* The two NPDES point sources, Triad Mining, Inc. and Griffin Industries, do not have a sanitary component to their discharges and therefore do not have any limits in their permits associated with *E. coli*. There is no wasteload allocation assigned to these two point sources. The CAFO, which has a general NPDES permit, must meet the water quality standard of 125/100 ml (geometric mean (5) samples equally spaced over a thirty (30) day period), nor exceed 235/100ml (one (1) sample in a thirty (30) day period.).

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this fifth element.

## 6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety (MOS) to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1) ). EPA's 1991 TMDL Guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.

Comment:

The Margin of Safety Section of the submittal states that there is an implicit margin of safety because no rate of decay was used in calculations or in load duration curves for the pathogens. Since pathogenic organisms have a more limited capability of surviving outside their hosts, a rate of decay would normally be used. However, it was determined by IDEM that it is more conservative to use the water quality standard of 125/100ml *E. coli*, and not to apply a rate of decay which could result in a discharge limit greater than the water quality standard.

EPA finds that the TMDL submittal from IDEM contains an appropriate MOS satisfying all requirements concerning this sixth element.

## 7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The TMDL must describe the method chosen for including seasonal variations. (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1) ).

Comment:

The Seasonality Section of the TMDL addresses seasonality by using WQS for total body contact during the recreational season (April 1st through October 31st) defined previously. Any high and low flows are addressed within the TMDL because this is a concentration-based TMDL, therefore all the standards will be met regardless of the season or flow events.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this seventh element.

## 8. Reasonable Assurances

When a TMDL is developed for waters impaired by point sources only, the issuance of a National Pollutant Discharge Elimination System (NPDES) permit(s) provides the reasonable assurance that the wasteload allocations contained in the TMDL will be achieved. This is because 40 C.F.R. 122.44(d)(1)(vii)(B) requires that effluent limits in permits be consistent with "the assumptions and requirements of any available wasteload allocation" in an approved TMDL.

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, EPA's 1991 TMDL Guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards.

EPA's August 1997 TMDL Guidance also directs Regions to work with States to achieve TMDL load allocations in waters impaired only by nonpoint sources. However, EPA cannot disapprove a TMDL for nonpoint source-only impaired waters, which do not have a demonstration of reasonable assurance that LAs will be achieved, because such a showing is not required by current regulations.

Comment:

The State offers the following reasonable assurances:

(1) CFOs must have approval of the State to operate and in order to obtain approval must meet certain performance standards and other requirement set out in 327 IAC 16. The CFOs are not a significant source of E. *coli* as long as they are in compliance with these regulatory requirements, and the State has authority to enforce these requirements:
(2) The CAFO discharge is regulated by a NPDES general permit and any discharge must meet the WQS for E. coli;
(3) There is a 319 proposal to reduce nonpoint sources.that contribute E. coli to the watershed under negotiation;
(4) IDEM hired a watershed specialist to work in this area of the state
(5) BMPs will be used to address the nonpoint sources. BMPs that will be considered include: riparian area management, manure collection and storage, contour row crops, no-till farming, manure nutrient testing, drift fences to direct livestock movement, pet clean-up in urban areas, and public education for septic management that reduces leakage and removes illicit discharges.

EPA finds that this criterion has been adequately addressed.

## 9. Monitoring Plan to Track TMDL Effectiveness

*EPA's 1991 document,* Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), recommends a monitoring plan to track the effectiveness of a TMDL, particularly when a TMDL involves both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur. Such a TMDL should provide assurances that nonpoint source controls will achieve expected load reductions and, such TMDL should include a monitoring plan that describes the additional data to be collected to determine if the load reductions provided for in the TMDL are occurring and leading to attainment of water quality standards.

Comment:

The Monitoring Section of the TMDL submittal states that monitoring will occur on the 5-year rotating basin schedule or when some of the TMDL implementation is in place. Monitoring will be adjusted as needed for continued source identification and determination whether standards are being met.

EPA finds that this criterion has been adequately addressed.

## 10. Implementation

EPA policy encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint source LAs established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. In addition, EPA policy recognizes that other relevant watershed management processes may be used in the TMDL process. EPA is not required to and does not approve TMDL implementation plans.

Comment:

There are several suggestions for BMPs in the TMDL watershed in the Potential Future Activities Section. They include structural or managerial practices such as:

- riparian management to protect streambeds and riverbanks;
- manure collection and storage that protects surface water and ground water from runoff;
- plant contour row crops perpendicular to the slope of the land;
- no-till farming to reduce wind and water erosion, catch snow, conserve soil and water, protect water quality, and provide wildlife habitat; and
- maintenance of plant residue to protect soil particles, increase infiltration, and reduce wind and water speed over the surface.

EPA finds that this criterion has been adequately addressed.

## 11. Public Participation

EPA policy is that there should be full and meaningful public participation in the TMDL development process. The TMDL regulations require that each State/Tribe must subject calculations to establish TMDLs to public review consistent with its own continuing planning process (40 C.F.R. §130.7(c)(1)(ii) ). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval should describe the State's/Tribe's public participation process, including a summary of significant comments and the State's/Tribe's responses to those comments. When EPA establishes a TMDL, EPA regulations require EPA to publish a notice seeking public comment (40 C.F.R. §130.7(d)(2) ).

Provision of inadequate public participation may be a basis for disapproving a TMDL. If EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

Comment:

There was a kick-off meeting for the public on August 24, 2004 in Bloomfield, Indiana. The TMDL was public noticed from September 27, 2004 to October 27, 2004. Invitations to the stakeholder meeting were sent on September 14, 2004. The meeting was held to provide an overview of the draft TMDL and provide an opportunity for public comments. The stakeholder meeting took place on October 7, 2004, at the Carnegie Public Library, 100 W. Main Street, Washington, Indiana. The presentation for the public meeting was included in the final TMDL submittal. Copies of the draft TMDL were posted on the IDEM's Web site at: http://www.in.gov/idem/water/planbr/wqs/tmdl/tmdldocs.html. U.S. EPA sent in comments and they were adequately addressed in the final TMDL.

Another meeting was held presenting the draft TMDL on January 27, 2005, in Bloomfield, Indiana. Public comments were solicited from January 18, 2005, through February 17, 2005 for this draft of the TMDL, via the website and a mailing list which included entities responsible for: natural resources; the environment; agriculture; sewer and water; and municipal and county governments. The public was also invited to review the document at the website listed above. One person submitted comments during the public comment period. The comments were adequately addressed in the final TMDL and in a letter to the commenter.

EPA finds that the TMDL submittal from Indiana satisfies all requirements concerning this eleventh element.

## 12. Submittal Letter

A submittal letter should be included with the TMDL submittal, and should specify whether the TMDL is being submitted for a *technical review* or *final review and approval*. Each final TMDL submitted to EPA should be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State's/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final review and approval, should contain such identifying information as the name and location of the waterbody, and the pollutant(s) of concern.

Comment:

EPA received the Final First Creek Watershed TMDL on March 23, 2005 accompanied by a submittal letter dated March 22, 2005. In the submittal letter, IDEM stated the submission includes the six Final TMDLs for 303 ID #116 Segment ID # INW0256_T1030, INW0257_T1031, INW0255_00, INW0257_T1030, INW0257_00, and INW0256_00. The letter states that the First Creek Watershed is impaired for Recreational Use on Indiana's 303(d) list due to *E. coli*.

## 13. Conclusion

**After a full and complete review, EPA finds that the IDEM submittal determines standard-based concentrations for a total of six TMDLs for First Creek in Martin, Daviess, and Greene Counties, Indiana. The allocations satisfy all of the elements of an approvable TMDL. This approval is for the waterbody segments and impairments set forth in the Table below, also shown on page 2 in Section 1 of this document. The pathogen impairment is addressed from the pollutant *E. coli*.**

| Waterbody Name | 303(d) List ID | Segment ID number(s) | Length (miles) | Impairment |
|---|---|---|---|---|
| First Creek and Unnamed Tributaries | 116 | INW0256_T1030, INW0257_T1031, INW0255_00, INW0257_T1030 | 31.0 | *E. coli* |
| Rocky Branch and Other Tributaries | 116 | INW0257_00 | 13.0 | *E. coli* |
| Culpepper Branch Tributaries | 116 | INW0256_00 | 14.0 | *E. coli* |